

State of West Virginia
Department of Environmental Protection
Office of Oil and Gas

Well Operator's Report of Well Work

Farm name: John Fleming Operator Well No.: John Fleming #2

LOCATION: Elevation: 1039' Quadrangle: Pocatalico

District: Union County: Kanawha
Latitude: Feet South of 38 Deg. 27 Min. 30 Sec.
Longitude Feet West of 81 Deg. 40 Min. 00 Sec.

Company: Larch Oil & Gas Corporation

	Casing & Tubing	Used in drilling	Left in well	Cement fill up Cu. Ft.
Address: 5 Kimeric Lane				
Agent: Jimmie Larch	13 3/8"	34'	34'	N/A
Inspector: Terry Urban	9 5/8"	512'	512'	252 cf
Date Permit Issued: 3/23/10 2/25/2011	7"	2165'	2165'	454 cf
Date Well Work Commenced: 3/29/10 3/2/2011	4.5"	5197'	5197'	384 cf
Date Well Work Completed: 4/23/10 12/21/2011	1.5"	5090'	5090'	N/A
Verbal Plugging:				
Date Permission granted on:	Install 2"X4" production Packer at 5078' on 1 1/2" tubing - 12/21/2011			
Rotary X Cable Rig				
Total Vertical Depth (feet): 5202'				
Total Measured Depth: 5202'				
Fresh Water Depth (ft.): 221'				
Salt Water Depth (ft.): 1395'				
Is coal being mined in area (N/Y)? N				
Coal Depths (ft.): 62' - 65', 154'-158'				

OPEN FLOW DATA

Producing formation Oriskany Pay zone depth (ft) 5120' - 5162'

Gas: Initial open flow 0 MCF/d Oil: Initial open flow Bbl/d

Final open flow 25 MCF/d Final open flow Bbl/d

Time of open flow between initial and final tests 72 Hours

Static rock Pressure 400 psig (surface pressure) after Hours

Second producing formation Devonian Shale Pay zone depth (ft) 3718' - 5023'

Gas: Initial open flow 0 MCF/d Oil: Initial open flow Bbl/d

Final open flow 200 MCF/d Final open flow Bbl/d

Time of open flow between initial and final tests Hours

Static rock Pressure 800 psig (surface pressure) after 72 Hours

NOTE: ON BACK OF THIS FORM PUT THE FOLLOWING: 1). DETAILS OF PERFORATED INTERVALS, FRACTURING OR STIMULATING, PHYSICAL CHANGE, ETC. 2). THE WELL LOG WHICH IS A SYSTEMATIC DETAILED GEOLOGICAL RECORD OF ALL FORMATIONS, INCLUDING COAL ENCOUNTERED BY THE WELLBORE.

Signed: Jimmie Larch

By: Jimmie Larch
Date: 3/14/12

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APR 02 2013

**WV Department of
Environmental Protection**

Formation:	Top:	Bottom:
Soil/Sand/Shale	0	765
Sand/shale	765	940
Silt/Shale	940	1000
Silt/Sand/Shale	1000	1365
Salt Sands	1365	1650
Maxton Sands	1715	1780
Big Lime	1780	1900
Injun Sand	1900	2095
Shale	2095	2485
Berea Sand	2485	2495
Devonian Shale	2495	5022
Huron Section	3706	4278
Rhinestreet Section	4700	4906
Marcellus Section	4979	5022
Onandaga Lime	5022	5120
Oriskany	5120	5176
Helderberg	5176	5202

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No Core Samples Taken

Cutting samples caught while drilling

On 4/20/10 MIRU Performance Wireline. Bond Log Production string and Perforate Oriskany Sands from 5120' - 5162' with 20 Shots.

On 4/23/10 MIRU BJ Services. Start pumping Gelled fluid to breakdown and establish rate. Spot Additional acid to perforations in attempt to decrease injection pressure with no success. Start pumping Crosslink fluid pad and follow with 0.25ppg sand laden fluid. Pump total of 1300lbs of 20/40 sand at max rate of 7bbl/min 3900psi. Flush to perforations and spot additional 12 bbls 15% HCL Acid. MIRU Performance Wireline. Perforate using 10' 20shot HSC under pressure from 5127' - 5137' (open hole log). No apparent change to injection pressure. SWI. RDMO BJ Services and Performance Wireline.

On 3/2/11 Perforate Marcellus Shale from 4986' - 5023' with 20s.f.

On 3/4/11 MIRU BJ Services Stim crew. Start pumping N2 at 30kscf/min and monitor pressure In preparation to drop frac ball and acid. Back rate down to 10-15kscf/min due to pressure, Continue pumping for total of 107kscf at average of 3800-3900psi to clear fluid. Shut down and Load 3 3/8" frac ball. Start pumping 2 bbls acid - drop ball and follow with 4 additional Bbls 7.5% acid with N2 mist. Land ball at 15-20kscf/min rate and breakdown formation. Continue to increase rate to 30kscf/min- pressure rose to 3900-4000psi. Back rate down to 20kscf/min and mist additional 2bbls acid. Work rate back up to 48kscf/min and pump total of 900kscf N2.

Perforate Rhinestreet Shale from 4710'-4869' with 20s.f. shots.

Start pumping 6 bbls 7.5% HCL Acid (drop 3 1/2" ball after 2) and follow with N2 at 15 - 20Kscf/min. Increase rate to 60kscf/min after 75-80kscf N2. Pump total of 900kscf N2 with 17 perf balls.

Perforate Lower Huron Shale from 4177'-4272' with 16 s.f. shots

Start pumping 6bbls 7.5% HCL (drop 3 3/4" ball after 2) and follow with N2 at 15-20kscf/min. Land ball at 57Kscf and break down at 1916psi. Increase rate and pump total of 800kscf N2 with 12 perf balls.

Perforate Upper Huron Shale from 3718' - 4164' with 14 s.f. shots

Start pumping at 26kscf/min drop 8 perf balls and start misting 6bbls of HCL acid. Pump total of 600kscf N2 with total of 24 perf balls.

	Marcellus	Rhinestreet	Lower Huron	Upper Huron
Max Pressure	4200	3200	3950	2850
Avg Pressure	4000	2950	3500	2650
Avg Rate scf/min	47,000	63,000	60,000	60,000
5 min shut in	2523	1528	1469	1516

On 12/21/11 MIRU Service Rig. Run 1 1/2" Tubing to depth of 5090' with production packer at 5078' to isolate deep production.